QUALITATIVE SENTIMENT ANALYSIS
on
MILLENNIAL USING NEURO-LINGUISTIC PROGRAMMING

SHORT SYNOPSIS

Submitted in partial fulfillment of the requirement of the degree of

DOCTOR OF PHILOSOPHY

to

Manav Rachna International Institute of Research and Studies
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by

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Certificate

I hereby declare that the short synopsis **"Qualitative Sentiment Analysis on Millennial Using Neuro-Linguistic Programming "** being submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in computer science & engineering under faculty of engineering & technology of Manav Rachna International Institute of Research & Studies, Faridabad during the academic year 2018-2019.

It is a bona fide record of original work carried out under the supervision of **Dr. Supriya P. Panda, Professor** and has not been submitted in full or part to any other university or institute for degree or diploma. Further, it is certified that short synopsis is plagiarism free and proof has been submitted.

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ABSTRACT

Sentiments or emotions are the key sources of almost all human activities and are influence of human behavior. People can express their views on social networks. This is an easy way to express their views and emotions. Sentiment Analysis is a technique used to analyze emotions, opinions and sentiments of people. Lot of companies & organizations are keen to know about the reviews of their quality of services. This research describes the idea behind sentiment analysis that can find sentiments and opinions of people, customers, and various social networks. Data can be collected from various resources in the form of feelings, emotions, and sometimes in the text form based on the real life perspectives.

Classification algorithms focus on the people sentiments and describe a way to find sentiment score with respect to positive and negative emotions. However, the huge popularity of Neuro Linguistic Programming over the past three decades has in some ways mirrored the growth in predicting emotional index in social environment. Great emphasis is on the Neuro Linguistic Programming. The new emerging area Neuro Linguistic Programming is used with sentiment analysis to capture the old emotions to create new one. Neuro Linguistic Programming deals with the behavioral patterns of various communities.

Till now researchers have focused on the quantitative research but it can restrict the emotions of people in a certain way. So there should be more impact on qualitative research so that people can express their views more clearly. This can increase the quality of work in certain social areas like media, politics, and various other areas. Politicians and other spiritual leaders are very much interested to know about the opinions of people. By inculcating NLP in the sentiment analysis research, the quality would improve in their services for the whole being of society. Politicians can make policies, media can improve the quality of information, and various spiritual leaders can improve the quality of knowledge. Neuro Linguistic Programming techniques are used to change the behavioral patterns of human mind to develop new patterns. Thus, Sentiment analysis with Neuro Linguistic Programming techniques would be used to change the behavioral patterns of human. This together would calculate the before and after effects of sentiments.

Keywords: Opinion mining, Sentiment Analysis, Classification Algorithms, Predicting emotions, Neuro-Linguistic Programming

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1. Introduction

Our thoughts and emotions are the seeds of every human mind, which makes our belief system. All social networks are concerned with a belief system. People can express their views on social networks, which is an easy way to express their views and emotions. Sentiment analysis (SA) is a technique used to analyze emotions, opinions, and sentiments of people. A lot of companies & organizations are keen to know about the reviews of their quality of services. Politicians are also interested in predicting the opinions of people about their services for the sentiment of society. It can also be useful in different social network forums, twitter sentiments, media-related tasks, and various blogs. Opinions are the source of every social network, which can be positive, negative, or neutral. Large organizations take these opinions as an opportunity because their progress and product services depend on reviews of society.

The root of sentiment analysis is the opinion analysis of people explored in the 20th century also text classification analysis explored in the 1990s. Its demand increases day by day due to its capability to handle Big Data on the internet. After 2004, various research areas like sales, stock market, social media, and many more have become regular customers of sentiment analysis (Stepanov and Riccardi, 2011). So, the polarity of sentiments can be bipolar, either positive or negative. Sometimes polarity of opinions can be checked for the whole document and can be calculated for every sentence for a particular statement.

Richard Bandler in the 1970s introduced Neuro-Linguistic Programming. Neuro-Linguistic Programming improves to provide a new way to various psychotherapy techniques. Different neuro-linguistic techniques are used to improve the mindset of people to change their old behavioral patterns. These patterns are always depending on the belief system of the human mind. Belief System is related to our habits, thoughts, feelings, and emotions. Neuro-Linguistic Techniques can affect the belief system of the human mind. Sentiment analysis using neuro linguistic programming is an emerging area that can find the emotional aspects of social networks and improve the mindset according to their behavioral patterns. This research can also affect the old behavioral patterns of the upcoming generation.

1.1 Motivation

Sentiment analysis (SA) is used to predict sentiments by using social networks like twitter for the stock market, online travel forums, and facebook social media. Policymakers are also measuring community well-being for the easiness of government making public policy directing ahead towards the quality of life rather than material welfare. The opinionated aspects (practical aspect) of people's lives well touch all these approaches. However, the emotional aspects in SA for communities, societies, rural and urban areas of countries have seen to be less touched by research communities. SA is a comprehensive study to handle the emotional aspect of various societies, communities, and working environments. The emotional aspects can explore both qualitative as well as quantitative research methods in SA.

Various biological neurons are known to program the human brain. These neurons are working on our past thinking patterns. According to sentiment analysis, these patterns can create positive, negative, and sometimes neutral results. According to Neural and Sentiment studies, Neuro-Linguistic Programming can be useful to develop the behaviors pattern of the new generation and can also reduce stress and anxiety in various working environments. According to the latest research on neuro-linguistic programming, people working in a group have different mindsets as compared to people sitting alone. This study would also help children having symptoms of dyslexia. The motive of this research is to develop the mindsets of the upcoming generation by applying neuro-linguistic techniques. There would have more impact on the qualitative approach of sentiment analysis. In essence, Neuro-Linguistic Programming is used to re-program the behavioral pattern of human beings as a tool that delivers transformation change.

Thus, this research aims to study and explore the various emotional aspects of people in all types of cultures and environments with an emphasis on SA and Neuro-Linguistic Programming.

1.2 Challenges

1. Positive or negative sentiment has a significant impact on various domains. However, their interpretation may be changed, for example, the word “high” has a different impact in a specific situation, it can be negative (“the ringtone is very high) or positive according to the given scenario, e.g., (“wow the voice quality is very high”).

2. There are many sentiment words which have not expressed any opinion for instance “Could you tell me which cell phone is the best?” and “If I can find a good speaker in the shop, I will buy it.” It doesn’t make any sense with a positive or negative opinion.

3. Many sentences express opinions without sentiment words. A sentence like “This fan consumes lots of power” makes a negative sense about the engine, but it can also use an essential word like power. These types of sentences usually express information about any object.

4. Sarcastic sentences such as “What a great scooter! It stopped working in two days” are hard to deal with, for instance, “What a great car! It stopped working in two days.” Sarcastic sentences with or without sentiment words are challenging to handle.

5. Single opinions represent subjective views about only a single entity. So, multiple views can be collected from multiple recourses to measure reviews about any product. Product reviews from multiple resources are always useful to express relevant information from an organizational point of view.

6. Forum discussions are difficult to deal with because a large number of users can make their opinions on irrelevant topics. Social and political opinions are also challenging to deal with a massive amount of sentiments and expressions as compared to product reviews.

2. Literature Review

Neidhardt, J., Rümmele, N. and Werthner, H. (2017) described a way to predict the emotions of tourists and also dataset related to tourist communities. This type of dataset is mainly used to describe the emotional aspects of tourists related to their journeys. These aspects are beneficial to maintain the next possible visits of tourists. Sentiment analysis plays a significant role in measuring and review the possible aspects related to tourism communities. Online travel forums can also predict their comments as per the rules of these communities. In this paper, there is no focus on the qualitative approach of sentiment analysis, such as how this qualitative sentiment analysis can allow a better understanding of the way the overall situation is perceived.

Vanmassenhove, E., Cabral, J.P., and Haider, F. (2016) described a way to convert various text into speech form. Any sentence can predict emotions, and further get converted into the synthetic voice. The polarity score calculates positive and negative polarity. Emotion-Prediction tool uses types of given sentences as input and the types of given voices as output. In this research, there is no focus on the emotional aspects of social communities.

Alessia, D., Ferri, F., Grifoni, P., and Guzzo, T. (2015) described the best suitable application tools and approaches used in sentiment analysis. Approaches for social media, machine learning, lexicon-based approach are useful in every aspect of sentiment analysis. These techniques can be applied through the document, sentence, and sometimes on the whole aspect of any entity. In this paper, there is no attention given to the emotional-based approach to predict the sentiments of various forums.

Liu, B. and Zhang, L. (2012) described the concept of sentiment analysis in such a way that researchers can find their new research perspectives with the help of their concepts. This document described the new approach, emerging application, and various tools of sentiment analysis. In this paper, there is a small description of different applications used in sentiment analysis. However, there is no focus on the opinion or sentiment-based idea to predict the emotional aspects of social communities.

Singh, T. and Kumari, M. (2016) focus on the role of text-pre-processing technique to find twitter sentiments. Experimental results used twitter corpus data. SVM based classifiers can also be useful to find the accuracy level of the trained data. Normalization and pre-processing are applied to short messages of twitter to calculate the opinion of spam and fake opinions. In this paper, there is no focus on any sentiment detection technique which predicts the spam and fake opinions.

Bhadane, C., Dalal, H. and Doshi, H. (2015) described the technique of NLP that is used to measure the moods and expressions of people with some subjective elements. Various methods are used to classify the sentences, whether they are positive or negative. Measuring opinions and sentiments help users to choose the best-suited product with the help of their sentiment scores. In this paper, there is less focus on the two-step method that is very useful to measure the opinions and sentiments.

Cambria, E., Schuller, B., Xia, Y. and Havasi, C. (2013) described the everyday sentiment analysis tasks for polarity classification take the example of thumbs up and down other is like and dislike. Polarity classifications focus on the online forums to find the best suitable reviews on any product or services. This paper also described the multimodel sentiment analysis for feature detection by using smartphones, touchpads, color filters. In this paper, there is no focus on the polarity detection schemes for the qualitative approach such as threat or challenge and the resources that individuals experience having to cope with emerging demands

Gandomi, A., and Haider, M. (2015) the authors well define the scope of big data, Five Vs. of big data. This paper focuses on the essential terms of big data like Text analytics, audio analytics, media analytics, social media analytics, and predictive analytics. The big data analytics can also be defined as the sources of cost-effective storage and computation and its timely devotion to the market analysis. In this paper, there is less attention to the analytics schemes related to various emotional aspects.

J Carey, R Churches, G Hutchinson, J Jones, P Tosey. (2010) described the concept of Neuro-Linguistic Programming. This paper focuses on various case studies used in teaching-learning techniques. It described how neuro-linguistic programming is used to improve the behavioral pattern of teachers as well as students. This technique impacts the mindset of teachers and students to develop an interest in their teaching and learning methods. In this paper, there is no description of how neuro-linguistic programming would improve the behavioral pattern of teachers and students. Also, there is no focus on the latest neuro-linguistic techniques that would be helpful for teachers as well as for students to improve their learning methods.

Jonathan Passmore and Tatiana Rowson. (2019) described the coaching techniques used in neuro-linguistic programming. This paper focuses on the review of the evidence of neuro-linguistic programming coaching. This evidence would impact the newly emerging areas in various fields related to social behavior. In this paper, there is no description of coaching techniques related to neuro-linguistic programming that would help to improve the behavior patterns of the upcoming generation.

Lashkarian, A. and Sayadian, S. (2015) described the concept of teaching and learning in various social communities. T-test shows the result as per the motivation factor and other achievements. Content analysis results show the improvements in effective communication and learning skills. In this Paper there is no description that how teaching and learning will be effective with the use of neuro linguistic programming.

Grosu, E. F., Grosu, V. T., Preja, C. A., & Iuliana, B. B. (2014) described the concept of various neuro linguistic techniques that will increase the performance level of athletes and children of judo team. This paper also described the efficiency and self-assesment ability of players at various levels and stages. In this there no focus that how neuro techniques will apply on players to increase their performance level.

Florina, G.E., Teodor, G.V., Cornelia, P.S. and Marin, D., (2015) described the concept of relationship between attention and anxiety in juniors, age less than 15 years, while playing for Romania. The paper focus on various neuro linguistic techniques used to train the mental states

to increase the performance level. In this paper there is less focus on the improvement of physical level through neuro linguistic techniques.

Hosseinzadeh, E. and Baradaran, A., (2015) described the relationship between Latest Teaching Autonomy and Neuro linguistic Programming. This paper focus on the latest teaching styles used by teachers. In this paper there is less impact on training method which will help teachers and trainers to improve their teaching autonomy. For that purpose neuro linguistic techniques will be the better solution.

Kök, İ., (2014) described the concept the working of left brain and right brain. This paper compares the patterns of our brain in various perspectives. In this paper there less impact on the training patterns of mind. There is no description that how brain cells changing the as per the outside environment and situations.

2.1 Research Gaps

1. According to the above surveys, there should be more impact on a qualitative survey in the field of sentiment analysis and Neuro-Linguistic Programming.

2. There is no focus on the emotional aspects of social communities. Emotional aspects are essential to understand the sentiments and emotions of various social communities.

3. There is no attention to sentiment detection techniques to improve the behavioral pattern of the upcoming generation.

4. There is no neuro-linguistic technique described for the improvement of the various teaching-learning methods.

5.There is no focus on the improvement of neuro-linguistic programming that how it would change the sentiments of various social communities.

3. Description of the Topic

Formally, sentiment analysis (SA) is expressed as a quadruple (Ti, S, O, T), where Ti is the target of an object, S is the group of sentiments expressed in the form of expressions and opinions. O is the opinion holder, which holds the output of the target. T is time by which opinion can be expressed according to the various input of target. The target can be any entity that can be the primary source of various sentiments. In various areas like politics, media, stock market, social media sites as Facebook, Twitter all can be the targets to express various sentiments in the field of sentiment analysis.

3.1 Document level

The document level is used to analyze the whole document in various forms, like if an organization needs a review of its product. A review can be positive or negative depending upon the consumer opinion. It is based on a single review; that's why this type of sentiment analysis can only be used for a single entity, not for multiple entities or reviews. So we can say that only a single product is analyzed at a single time. Thus multiple products are not applicable at the document level.

3.2 Sentence level

The sentence-level mainly focuses on sentence rather than the whole document, and a sentence can be analyzed in three different ways positive, negative, or neutral. Spellings, sentence fragments, mistakes in writing, etc. are some of the examples that need to be analyzed in sentence level. Missing of a subject and verb or both generate a sentence fragment.

3.3 Aspect Based Sentiment Analysis

The above discussion concludes that both the high levels have not to care about the opinions of people. However, considering the aspect level, it depends upon the likes and dislikes of people. Aspect level directly focuses on opinions instead of Language constructs. Aspect level always

takes a target as an opinion. Opinion always takes two aspects; one is positive, and the other is negative. For example, the sentence “The Honda scooter engine is good, but its battery life is short” it analyzes various aspects like the quality of engine other is a lifetime of the battery. The sentiment about the scooter engine is positive, but about battery life, it is negative. This example shows how aspect levels focus on different opinions.

a) Sentiment Lexicon

It is another critical level of sentiment analysis mainly focuses on sentiment words or opinion words. These words are known as sentiment lexicon. Each opinion word has a different aspect in different domains. Also, a sentence may not always express sentiments. Sometimes neutral reviews are there in a sentence.

“can you please tell me which bike is good.”
“if I can find a good bike in the showroom, i will buy it.”
“can you please tell me which bike is good.”
“if I can find a good bike in the showroom, i will buy it.”

Here the example expresses the “good” is a sentiment word, but it has no meaning at all.
An entity could be a product name, organization name, or any event. Figure.1 shows the entity bike and its subparts as description engine and battery; also, the engine has subparts like fuel and controls.

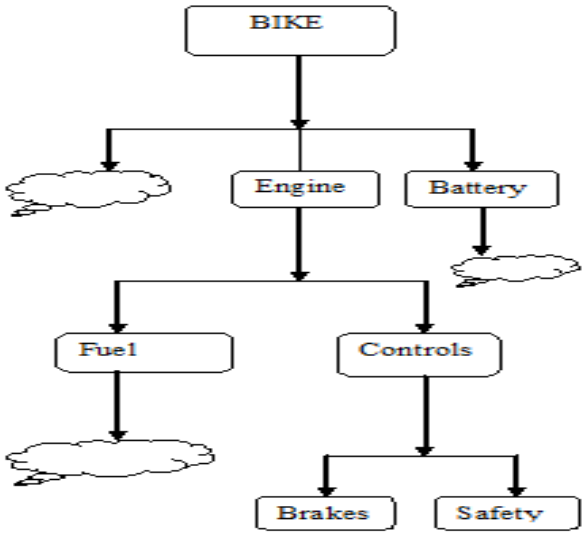

Figure. 1: Entity Sentiment Lexicon: - Self

b) Opinion Definition

Formally, an opinion is represented by a five-tuple or quintuple (e, a, s, h, t), where e acts as an entity, a and s the sentiment expressed about the aspect of an entity, h the opinion holder used to hold the aspect of that entity, and t is the time interval where the opinions and sentiment are expressed in various forms.

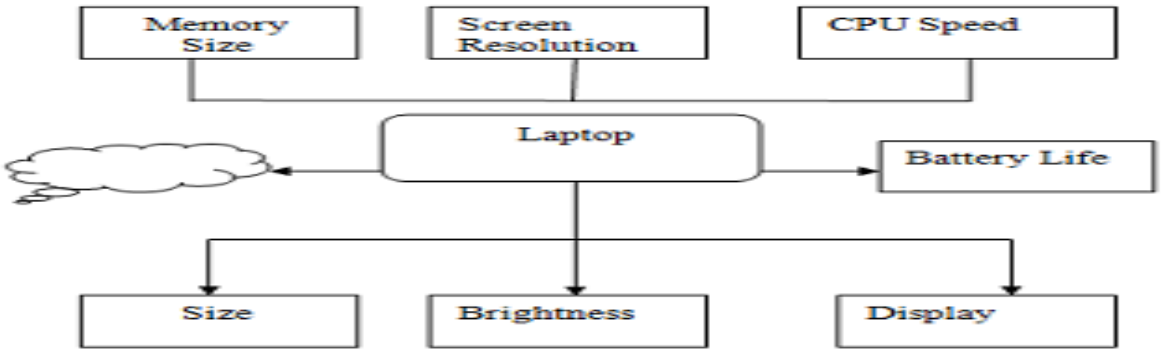

Figure. 2: Opinion Target: - Self

Opinion target is expressed as by the entity and its aspect. Many review sites can express the polarity of the sentiments. The polarity of the sentence can be calculated with 1 to 5 stars. For example, in the sentence "The Hindus adore him, but the English hate him." Figure.2 shows the entity laptop, and its subparts are battery life, memory size, CPU speed. The laptop entity contains sentiments about its services by which large organizations can review the customer's feedback. These reviews can increase product services as per the market requirements.

Detection of spam messages

With the increase in web sources on the World Wide Web possibility of spams is also increasing day by day. It's now the biggest challenge for researches and internet users. Fake opinions and spam messages are difficult to handle.

4. Problem Identification

The quantitative approach has less impact on the emotional aspects of social communities, which would restrict the feelings and emotions of people. There is no realistic way to express there feelings and emotions. Neuro-Linguistic Techniques would apply to the human mind to develop a realistic mindset and calculate the before and after effect of sentiments using physiotherapeutic surveys. Neuro-linguistic programming would impact on the behavioral pattern of people mindset to develop new and innovative ideas according to their needs and requirements. After applying neuro-linguistic programming, SA would apply to calculate the sentiments of the different mindsets.

5. Objective of Study

The objectives of this study is

1. To understand aspects of Neuro-Linguistic programming in balancing the practical and emotional index in social networks, communities and various forums.

2. To analyze the moods of people and working persons in various activities related to travelling, working culture, and various aspects happening in their lives.

3. To implement the idea using SA through Python and calculating the sentiments.

4. To develop a model for new mindset of upcoming generation through various Neuro Linguistic Techniques.

6. Research Methodology

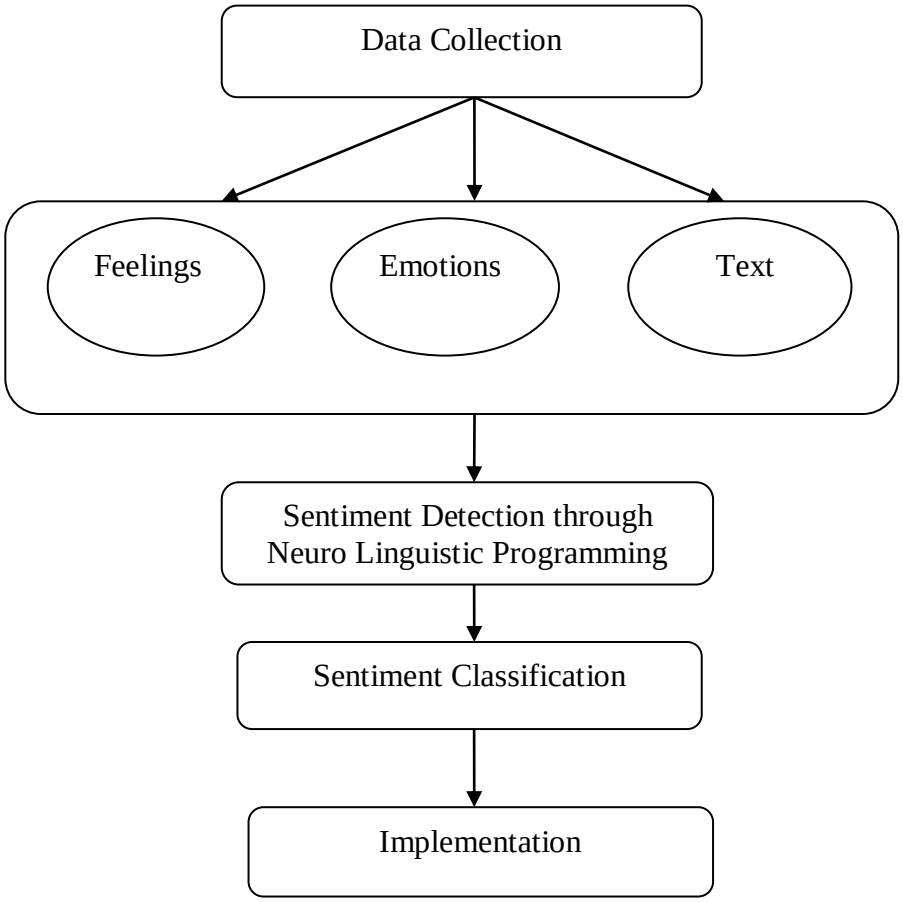

Figure. 3: Research Methodology

Neuro-Linguistic Programming is used to analyze the behavioral pattern of the upcoming generation. Data collection is based on before and after the effect of different surveys. In this aspect, Sentiment detection would play an essential role during the conduction of surveys, workshops, and seminars. It explains the behavioral pattern of an individual to calculate before and after the effect of various sentiments. After that, sentiment can be classified into various categories like positive, negative, and neutral. Seminars and workshops would base on the idea of Neuro-Linguistic Programming. Neuro-linguistic techniques would be applied to different individuals to know about their behavior patterns. Python would be a suitable platform. These behavior patterns would come under the sentiment classification phase, where sentiments would be calculated. It would show the before and after effects on different mindsets by applying neuro-linguistic techniques. After this phase, Neuro-linguistic techniques would impact on old behavior patterns of various social communities and help them to improve their mindset according to the newly developed patterns. Then their sentiments would be calculated according to the new development of patterns.

7. Proposed Outcomes

The Proposed outcomes would explain the idea of qualitative and quantitative research depending on various surveys for social communities and societies. These surveys would be based on neuro-linguistic programming used to calculate the sentiments according to various behavioral patterns. It can also establish a correlation between the happiness and stress index depending upon the moods of people and employees. The main impact would be to develop a mindset by reprogramming the behavioral patterns of the upcoming generation by using neuro-linguistic programming. This technique, when used with sentiment analysis, can leave a transformational impact on various sentiment patterns and develop the new patterns for the benefit of the upcoming generation.

References

Abbasi, A., Fu, T., Zeng, D., Adjeroh, D., 2013. Crawling Credible Online Medical Sentiments for Social Intelligence. Proceedings of the ASE/IEEE International Conference on Social Computing.

Alessia, D., Ferri, F., Grifoni, P. and Guzzo, T., 2015, Approaches, tools and applications for sentiment analysis implementation, International Journal of Computer Applications (0975 – 8887) Volume 125 – No.3, September 2015, pp.26-33

Bhadane, C., Dalal, H. and Doshi, H., 2015, Sentiment analysis: measuring opinions. Procedia Computer Science, 45, pp.808-814.

Cambria, E., Schuller, B., Xia, Y. and Havasi, C., 2013, New avenues in opinion mining and sentiment analysis. IEEE Intelligent Systems, 28(2), pp.15-21.

Carey, J., Churches, R., Hutchinson, G., Jones, J. and Tosey, P.C., 2009. Neuro-linguistic programming and learning: Teacher case studies on the impact of NLP in education.

Florina, G.E., Teodor, G.V., Cornelia, P.S. and Marin, D., 2015. Neurolinguistic programming and the relationship between attention and anxiety in Alpine skiing juniors. Procedia-Social and Behavioral Sciences, 191, pp.1634-1638.

Gandomi, A. and Haider, M., 2015, Beyond the hype: Big data concepts, methods, and analytics. International Journal of Information Management, 35(2), pp.137-144.

Grosu, E. F., Grosu, V. T., Preja, C. A., & Iuliana, B. B. 2014. Neuro-linguistic Programming based on the Concept of Modelling. Procedia-Social and Behavioral Sciences, 116, 3693-3699.

Hosseinzadeh, E. and Baradaran, A., 2015. Investigating the Relationship between Iranian EFL Teachers' Autonomy and Their Neuro-Linguistic Programming. *English Language Teaching*, *8*(7), pp.68-75.

Kök, İ., 2014. Listening comprehension achievement and brain dominance. Procedia-Social and Behavioral Sciences, 122, pp.329-334.

Lashkarian, A. and Sayadian, S. 2015. The effect of Neuro Linguistic Programming (NLP) techniques on young Iranian EFL Learners' motivation, learning improvement, and on teacher's success. Procedia-Social and Behavioral Sciences, 199, pp.510-516.

Neidhardt, J., Rümmele, N. and Werthner, H., 2017. predicting happiness: user interactions and sentiment analysis in an online travel forum. Information Technology & Tourism, 17(1), pp.101-119.

Passmore, J. and Rowson, T., 2019. Neuro-linguistic programming: A review of NLP research and the application of NLP in coaching. International Coaching Psychology Review, 14(1), p.57.

Singh, T. and Kumari, M., 2016, Role of text pre-processing in twitter sentiment analysis. Procedia Computer Science, 89, pp.549-554.

Vanmassenhove, E., Cabral, J.P. and Haider, F., 2016, Prediction of emotions from text using sentiment analysis for expressive speech synthesis, In 9th ISCA Speech Synthesis Workshop 13-15 Sep 2016, Sunnyvale, USA , pp.21-26.

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Data collection contributes to various resources in the form of feelings, emotions, and sometimes in the text form based on real-life perspectives.

Classification algorithms focus on the people sentiments and describe a way to find a sentiment score concerning positive and negative emotions. However, the massive popularity of Neuro-Linguistic Programming (NLP) over the past three decades has, in some ways mirrored the growth in predicting emotional index in a social environment. Great emphasis is on the Neuro

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